Determination of flux of moisture magnitude and direction by wind and moisture characteristics

Abstract

This thesis deals with determination of moisture flux magnitude and direction by wind and moisture characteristics. A source of this thesis is the ERA-40 reanalysis, a service area is Europe and adjoining part of the Atlantic ocean. There are used data from four selected preasure levels from period since September 1957 to August 2002. A standardized share of wind speed and specific humidity is created for research of the influence of these values on specific moisture flux magnitude and a regional distribution, a vertical distribution and an annual run of the influence of values is researched on its base. The influence of wind speed on moisture flux magnitude increases with rising latitude and altitude. The influence of wind speed is also higher in winter than in summer. A difference in standardized share between winter and summer increases with rising distance from an ocean.

Keywords: moisture flux, wind direction, wind speed, specific humidity, ERA-40 re-analysis, Euroatlantic area